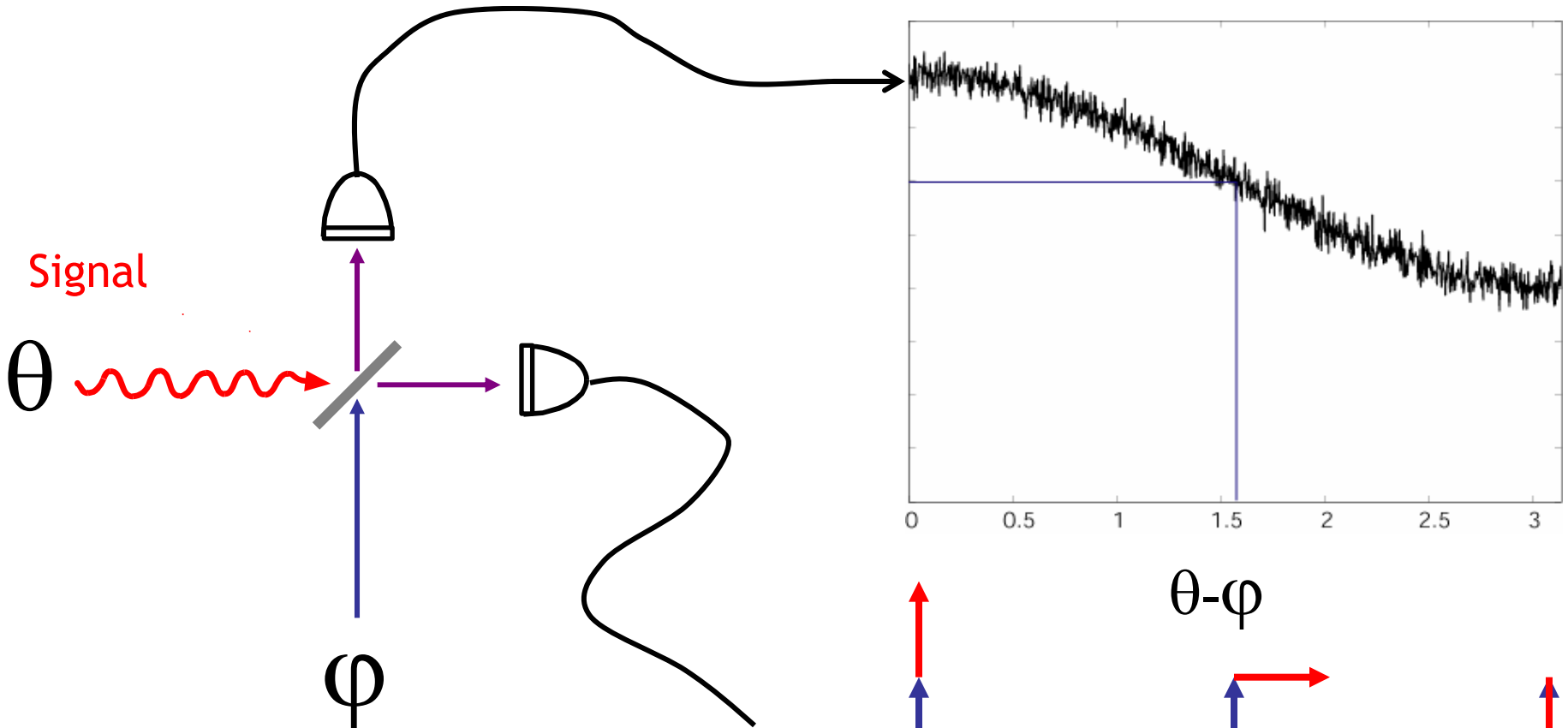
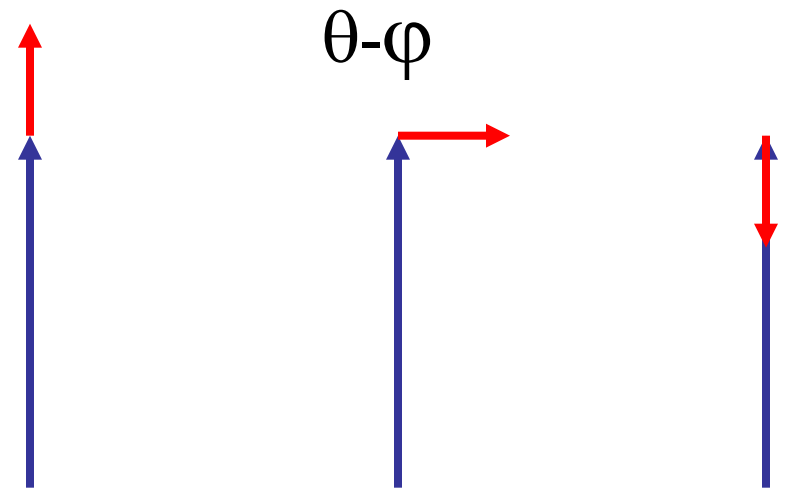


Measuring optical phase; shot noise



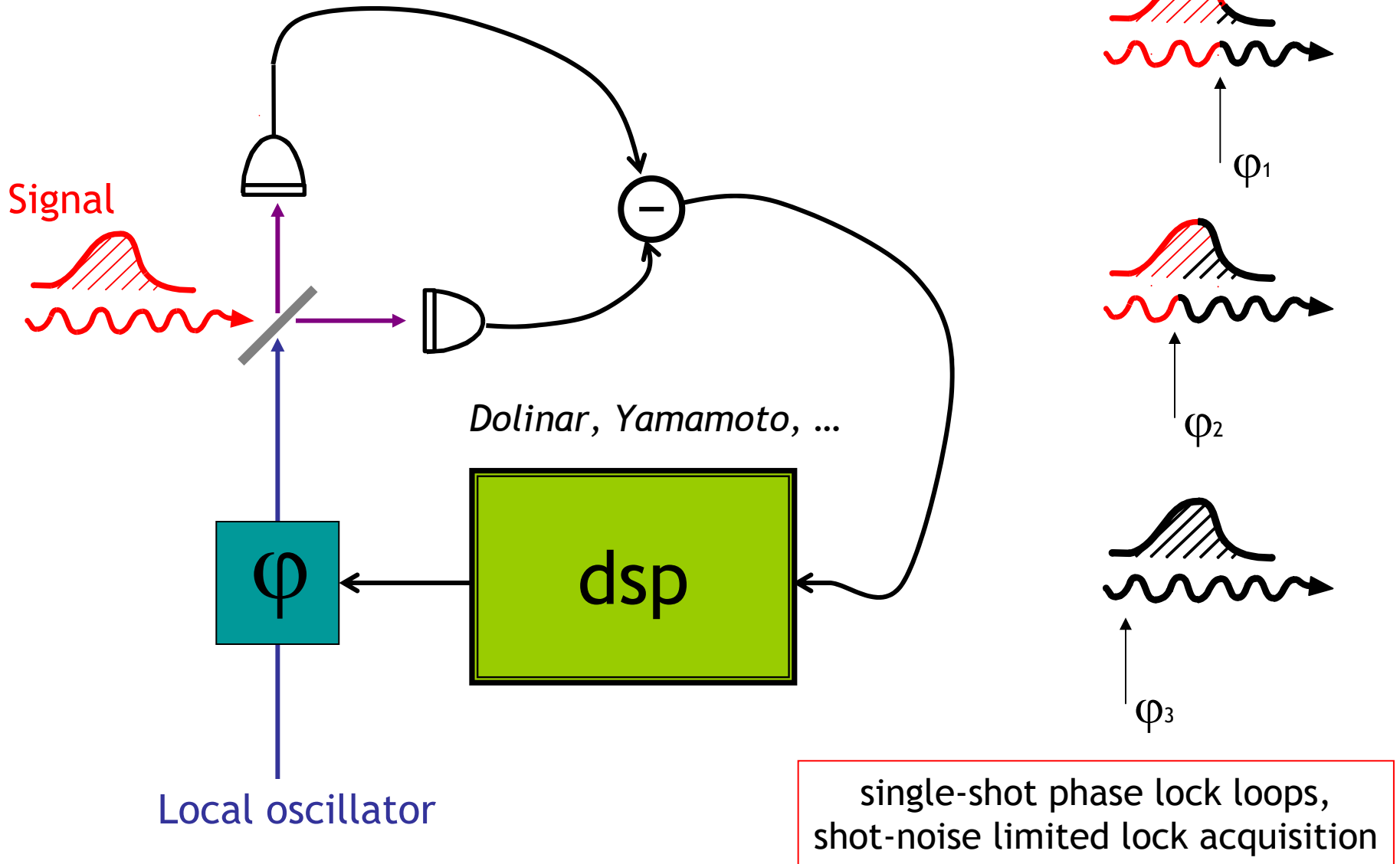
Local oscillator

Shot-noise-limited phase measurement is of great interest in quantum optics, optical communication, 'nano-sensing,' ...



PLL / Adaptive homodyne measurement

PRL 75, 4587 (1995); PRL 89, 133602 (2002)



Optimized PLL's for coherent signal recovery

- Course project: investigate design of PLL signal processing algorithms
- beyond steady-state error and overshoot/settling-time specifications
- design for channel capacity, dynamic range, parameter estimation
 - applications: communication, optical readout of AFM/MRFM

